

CLAIM SET AS AMENDED

1. (Currently Amended) A water spray head for spraying water spray mist in a fire prevention system, comprising:

a water supply duct~~(1)~~;

a spray head upper body ~~(2)~~; a fluid chamber ~~(3)~~; and

a “w” shaped bottom ~~(4)~~, on which at least two rings of nozzles ~~(6, 8)~~ are installed.

2. (Currently Amended) The water spray head as in claim 1, wherein the at least two rings of nozzles include an outer ring ~~(8)~~ and an inner ring ~~(6)~~, the nozzles installed on the outer ring ~~(8)~~ are pointed outward and downward and the nozzles installed on the inner ring ~~(6)~~ are pointed inward and downward.

3. (Original) The water spray head as in claim 1, wherein the spray head produces finer water mist spray than each individual nozzle.

4. (Currently Amended) The water spray head as in claim ~~1~~ 2, wherein water mist sprays from the inner ring of nozzles ~~(6)~~ collide with each other ~~(15)~~ to produce finer water droplets ~~(16)~~, thereby improving fire suppression efficiency.

5. (Currently Amended) The water spray head as in claim 4, wherein the nozzles on the inner ring ~~(6)~~ are installed with a tilt angle (γ) so that the spray mist from the inner nozzle collides tangentially.

6. (Currently Amended) The water spray head as in claim 5, wherein a downward water mist nozzle (~~7~~) is installed on a face (~~12~~) of the spray head bottom (~~4~~).

7. (Currently Amended) The water spray head as in claim 1, wherein the water spray head has a “~~solid cone~~” solid cone spray pattern regardless of the spray pattern of each individual nozzle.

8. (Currently Amended) The water spray head as in claim 1, wherein the nozzles are assembled with the spray head by a thread screw connection (~~9~~).

9. (Original) The water spray head as in claim 8, wherein the nozzles can be easily replaced using new nozzles instead of a whole spray head when a potential fire scenario changes.

10. (Original) The water spray head as in claim 1, wherein some of the nozzles are installed with a stop, depending on the potential fire scenario.

11. (Currently Amended) A water mist nozzle of a water spray head for generating water mist, comprising:

a cylindrical body (~~7~~);

a main channel (~~20~~) at a discharging end (~~22~~) along an axis of the water mist nozzle; and

a plurality of channels at an inlet end (~~19~~) of the water mist nozzle, including a central small channel (~~24~~) and side slant channels (~~23~~), the channel (~~20~~) at the discharging end (~~22~~) being larger than the plurality of channels at the inlet end (~~19~~).

12. (Currently Amended) The water mist nozzle as in claim 11, wherein liquid flowing from channels (23,24) at the inlet end (19) converge into the channel (20) at the discharging end (22).

13. (Currently Amended) The water mist nozzle as in claim 11, wherein the water mist is formed due to collisions of water jets from the small channels (23,24) and the side slant channels at the inlet end colliding with each other at the main channel (20) at the discharging end, droplet collisions on a channel wall (25) and the effect of pressured jet through a small orifice.

14. (Currently Amended) The water mist nozzle as in claim 11, wherein a series of water nozzles with different performance and mist characteristics designed by varying one or more of a diameter, a depth, and a slant angle of the main channels, the small channels, and the side slant channels. ~~the design parameters D_1 , D_2 , D_3 , H , h , η , and so on.~~

15. (Currently Amended) The water mist nozzle as in claim 11, wherein the nozzles are assembled with the spray head by a thread connection (9).

16. (Original) The water mist nozzle as in claim 19, wherein the nozzles can be easily replaced using new nozzles only instead of a whole spray head when a potential fire scenario changes.

17-18. (Canceled)